



ORIGINAL COURSE IMPLEMENTATION DATE: January 2016
 REVISED COURSE IMPLEMENTATION DATE:
 COURSE TO BE REVIEWED: (six years after UEC approval) January 2017
 Course outline form version: 09/15/14

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: CHEM 410	Number of Credits: 6 Course credit policy (105)																
Course Full Title: Undergraduate Research in Chemistry II																	
Course Short Title (if title exceeds 30 characters): Undergrad Research in Chem II																	
Faculty: Faculty of Science	Department (or program if no department): Chemistry																
Calendar Description: This course is for students pursuing a major in chemistry and involves the completion of a research project designed in consultation with a supervisor. Normally this course will be taken during the fourth year of study. It can be completed in either one or two semesters.																	
Prerequisites (or NONE):	NONE																
Corequisites (if applicable, or NONE):	NONE																
Pre/corequisites (if applicable, or NONE):	CHEM 409 and permission of the department head.																
Equivalent Courses (cannot be taken for additional credit) Former course code/number: N/A Cross-listed with: Equivalent course(s): <i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>	Transfer Credit Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Transfer credit requested (OREg to submit to BCCAT): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form) Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input type="checkbox"/> No To find out how this course transfers, see bctransferguide.ca .																
Total Hours: 180 Typical structure of instructional hours: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td></td></tr> <tr><td>Seminars/tutorials/workshops</td><td></td></tr> <tr><td>Laboratory hours</td><td></td></tr> <tr><td>Field experience hours</td><td></td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td></td></tr> <tr><td>Student Directed Learning: 180</td><td style="text-align: right;">180</td></tr> <tr><td style="text-align: right;">Total</td><td style="text-align: right;">180</td></tr> </table>	Lecture hours		Seminars/tutorials/workshops		Laboratory hours		Field experience hours		Experiential (practicum, internship, etc.)		Online learning activities		Student Directed Learning: 180	180	Total	180	Special Topics Will the course be offered with different topics? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, different lettered courses may be taken for credit: <input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit <i>Note: The specific topic will be recorded when offered.</i> Maximum enrolment (for information only): 5 Expected frequency of course offerings (every semester, annually, every other year, etc.): yearly
Lecture hours																	
Seminars/tutorials/workshops																	
Laboratory hours																	
Field experience hours																	
Experiential (practicum, internship, etc.)																	
Online learning activities																	
Student Directed Learning: 180	180																
Total	180																
Department / Program Head or Director:	Date approved: April 2016																
Faculty Council approval	Date approved: April 29, 2016																
Campus-Wide Consultation (CWC)	Date of posting:																
Dean/Associate VP: Lucy Lee	Date approved: April 29, 2016																
Undergraduate Education Committee (UEC) approval	Date of meeting: May 20, 2016																

Learning Outcomes

Upon completion of the course, a successful student will have demonstrated the ability to:

- Carry out a literature search on their chosen research topic.
- Formulate a written research proposal in which the rationale for their choice of research topic is presented.
- Perform the necessary experimental work and/or use the relevant computer software in order to complete the project in a timely, safe, and effective manner.
- Handle all necessary equipment and chemicals in a safe and effective manner.
- Master any specific techniques required to complete the chosen project.
- Produce a written report on their research, written in a clear and scholarly way, and in the style of a major scientific journal.
- Present the results of their research by means of a seminar or other form of presentation approved by the supervisor.

Prior Learning Assessment and Recognition (PLAR)

Yes No, PLAR cannot be awarded for this course because N/A

Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

The student will be expected to access the chemical literature using on-line and/or traditional methods.

Grading system: Letter Grades: Credit/No Credit: Labs to be scheduled independent of lecture hours: Yes No

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.		<input type="checkbox"/>		
2.		<input type="checkbox"/>		
3.		<input type="checkbox"/>		
4.		<input type="checkbox"/>		
5.		<input type="checkbox"/>		

Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

All necessary laboratory materials and/or computing facilities will be provided

Typical Evaluation Methods and Weighting

Student Proposal:	15 %	Intermediate report:	%	Intermediate oral presentation:	%	Final Report:	30 %
Oral Presentation:	15 %	Lab work:	%	Field experience:	%	Shop work:	%
Other:	40 %	Other:	%	Other:	%	Total:	100 %

Details (if necessary):

Proposal - 15% (including, written proposal 5%, oral presentation 5%, ability to answer questions 5%)
 Effort/results (judged by weekly progress reports) - 40%
 Final oral presentation - 15%
 Final written report - 30%

Typical Course Content and Topics

N/A